

think it most probable that Mr. Tice's apparatus will remove this objection, as it is one that can be worked by a sweeper.

- (4) It may be argued that the septic tank effluent being put into the Hooghly has raised a considerable amount of feeling amongst the native population, and this is not likely to be allayed by the addition of chlorinated lime to the effluent. Although it is impossible to say what line native opinion will take, there can be no real cause for complaint, because the chlorine of the chlorinated lime is dissipated in the air, after having done its sterilizing work, and by allowing a short period of settling a large proportion of the lime settles at the bottom and never need go into the river at all. The treated effluent is a clear opalescent fluid possessing a slightly chlorinous odour. It is virtually sterile, and hence much purer than Hooghly water itself, and contains less living organisms than the Calcutta drinking water.

27 The advantages of the above method of treating effluent are that it is efficient, easy to carry out, and cheap. In bringing the above results to the notice of Government, it is not claimed that there is anything new about the methods or that the whole subject has been exhaustively worked out. But I feel sure that it is a practicable method and one that will remove all danger of polluting rivers to such an extent as to cause sickness and epidemics of disease.

I am prepared to submit a set of rules for the working of septic tank latrines, if Government think they are required.

28. Since this report was written, a valuable paper has just reached India in which chlorine is reported to have been used in large quantities to render septic tank effluent sterile in order to prevent the danger of infecting oysters, shell-fish and water-cross with pathogenic organisms. The method used is not that of chlorinated lime, but is the same in principle. A solution rich in oxychlorites and the hypochlorites is manufactured on the spot by treating sea water or prepared brine with a strong electric current. This method could be employed in this country, if ever very large quantities of effluent had to be dealt with, but it would not pay to put in the necessary installation for small quantities. Further, as no sea water is available brine would have to be manufactured; and salt is more expensive than chlorinated lime in this country. On the other hand chlorinated lime is easily obtainable, cheap, and thoroughly efficient; and for small quantities of effluent its use is practicable.

29. In conclusion, I have to point out that these experiments were made by the courtesy of Messrs. Bird & Co. on some of their installations. The latrine at Kanchrapara is a great success and is working admirably. To them my best thanks are due for their kindness and the assistance they have given me

Correspondence.

THE HISTORY OF THE INDIAN MEDICAL SERVICE.

To the Editor of "THE INDIAN MEDICAL GAZETTE."

SIR,—May one from "the Bombay side" suggest to Lt.-Col. Crawford, from whose pen many very interesting articles on the Indian Medical Service have appeared in your pages, that a Complete History of the Service from its first beginnings would be much appreciated by the service as a whole. Such an enterprise would of course need money, but I am certain there would be no difficulty about this as practically all officers in the service would contribute gladly to such an enterprise.

The early history of the service appears to have been explored by Colonel Crawford as a labour of love and it would be more than a pity if his knowledge is not made the common property of the service.

I would suggest that such a History of the Service should consist of two parts—

- (a) the history proper.
- (b) list of officers from the first so far as these can be ascertained with faller references to any officers who have distinguished themselves and brought honour to the service.

There are doubtless officers in the other Presidencies who would collaborate with Colonel Crawford in supplying information.

Yours faithfully,

"BOMBAY."

[See above, p. 101.—ED., I. M. G.]

THE PRESENCE OF BALANTIDIUM COLI IN INDIA.

To the Editor of "THE INDIAN MEDICAL GAZETTE."

SIR.—Although, owing to the customary lack of the necessary literature in India, I was unable to exactly identify the organism, beyond placing it as a heterotrichous infusorian, I have repeatedly met with this protozoon in the stools of patients in India, and if I mistake not, published a note on the subject, in this journal, shortly before I retired. In examining the dejecta for the ova of Anchylostoma, I have been familiar with it for many years, but it was only on this last occasion that I discovered why one so rarely sees it. The reason is that it dies, or at any rate alters its appearance so as to be quite unrecognisable, almost as soon as the faeces have cooled.

As far back as 1890, when investigating Kala Azar in Assam, I found that a considerable proportion of the dejecta examined contained numbers of peculiar bodies whose nature puzzled me greatly, but which I felt almost sure were referable to the protozoa, and suggested might be coccidia containing sporosperms, although I quite failed to find anything suggestive of disease of this sort in the intestinal epithelium of the few cases I was able to examine *post mortem*. In all parts of Northern India subsequently I was continually meeting with these bodies, and often suspected them of being in some way connected with certain forms of diarrhoea or dysentery, though their occurrence in cases in which, for the time at least, the intestinal secretions were normal, made it apparent, and unjustifiable to impute to them a causal connection; and their exact nature remained as great a puzzle as ever. Now it used to be my custom to examine all prisoners admitted to the district jail for Anchylostomiasis, and it chanced that a new admission had only produced the necessary specimen just in time for examination.

On this account, the specimen had not as usual been preserved by the addition of carbolic solution, but was placed on the slide while still warm, and was found to be swarming with what I now know to be *Balantidium coli*. While making the necessary drawings, my attention was diverted by the necessity of attending to a specimen of that eternal Indian nuisance, the *chit*; and on returning to the microscope, I was mortified to find that the Infusorians had entirely disappeared, and exactly in the place of the one I had been drawing lay one of my old friends the quasi-coccidia. In the now cold faeces, no infusoria, but only coccidia could be found, and though I certainly did not witness the actual transformation it appeared almost certain that the latter are nothing but the resting stage of the infusorian. The next day I found that my "case" had been released by the magistrate, and I left India too soon after to find another opportunity of observing this curious parasite. Of course I recognise that the facts observed shew that the bodies are not coccidia, but that they are probably a developmental stage of the infusorian. The "coccidia" vary in size

and shape, but are generally rather oval and about $\frac{1}{1,000}$ in.

length; and a rather badly reproduced drawing of them will be found in my official "Report on Kala-azar and Beri-beri." Those wishing then to investigate this parasite should examine the dejecta absolutely immediately after deposition, and without any addition; and with these precautions will not, I think, be long in meeting with cases, and will I hope be more fortunate than the writer in working out their complete life history.

LONDON:
January, 1906.

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Lt.-Col., I.M.S., retd.

[See a recent Note on this subject *Indian Medical Gazette*, December 1905, p. 470.—ED., I. M. G.]